

REMARKS

Claims 1-17, 62 and 63 are pending.

Initially, as a procedural matter, applicant respectfully requests withdrawal of the finality of the present Office Action. MPEP § 706.07 (a) sets forth that a second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims, nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p). In the Office Action dated February 11, 2008, the Examiner introduced two new rejections, i.e., (1) the rejection of Claims 1-11, 62 and 63 under 35 U.S.C. §103 (a) as being obvious over Cherpeck U.S. Patent No. 5,306,315 ("Cherpeck '315") and (2) the rejection of Claims 1-6, 8-15 and 17 under 35 U.S.C. §103 (a) as being obvious over Cherpeck U.S. Patent No. 5,399,178 ("Cherpeck '178") in view of Burow et al. U.S. Patent Application Publication No. 20020090320 ("Burow et al.") and Lutterman et al. U.S. Patent No. 6,713,264 ("Lutterman et al."). As these rejections were not necessitated by applicant's amendment of the claims in the Amendment filed on March 19, 2007 nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p), applicant respectfully submits that the finality of the present Office Action is premature. Accordingly, applicant respectfully requests that the finality of the Office Action be withdrawn and a non-final Office Action be issued instead.

The Examiner has rejected Claim 16 under the second paragraph of 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is the Examiner's belief that Claim 16 is indefinite since it appears to have no positive, active steps. It is also the Examiner's belief that the term "basis" is confusing because it is not clear if this term is intended to provide any method steps. However, it is a well established rule that "whether a claim is invalid for indefiniteness requires a determination whether those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Morton International Inc. v. Cardinal Chemical Co.*, 28 USPQ2d 1190, 1194-95 (CAFC 1993).

The specification clearly sets forth on page 6, lines 2-8 that adding the information related to the deposit formation data of each of the stored compositions, i.e., the results of step (b), substantially facilitates the selection of candidate compositions capable of successfully carrying out the deposit formation tests under the desired operating conditions or statutory requirements. Accordingly, storing this information in a combinatorial library not only allows for a rapid selection of multiple fuel compositions in response to new requirements for a given test, but also becomes another piece of information in addition to, for example, storage stability, of the cataloged compositions. The specification further sets forth on page 6, lines 9 and 10 that this information, i.e., the results of step (b), may also allow for calculating necessary changes of the additives and fuels at the least cost. This clearly sets forth that the results of step (b) can be used as a basis in determining whether any changes in the additives and/or fuel used in the compositions needs to be adjusted in order to find the leading fuel compositions. As such, one skilled in the art would readily

understand that the recitation "further comprising the step of using the results of step (b) as a basis for obtaining a result of further calculations" of the claimed method recites a positive active step when analyzing the contents of the specification. Therefore, Claim 16 is believed to be sufficiently clear and definite as to comply with the requirements for definiteness under the second paragraph of 35 U.S.C. §112.

For the foregoing reasons, amended Claim 16 is believed to be sufficiently clear and definite as to comply with the requirements for definiteness under the second paragraph of 35 U.S.C. §112 and withdrawal of the rejection is respectfully requested.

The Examiner has rejected Claims 1, 2 and 8 under 35 U.S.C. §102(b) as being anticipated by Heneghan et al., JOURNAL OF ENGINEERING FOR GAS TURBINES AND POWER TRANSACTIONS OF THE ASME ("Heneghan et al.").

In the Office Action, it is the Examiner's belief that the instruments of Heneghan are reasonably considered "high throughput" instruments in comparison to actually operating jets in the normal manner and testing them after years of flying. The Examiner maintains that the phrase "high throughput" is part of the preamble and bears very little patentable weight, if any, citing MPEP §2111.02 (the determination of whether a preamble limits a claim is made on a case-by-case basis in light of the facts in each case; there is no litmus test defining when a preamble limits the scope of a claim), *Catalina Mktg. Int'l v. Coolsavings.com Inc.*, 289 F.3d 801, 808, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002) ("[i]f the claim preamble, when read in context of the entire claim, recites limitations of the claim, or, if the claim preamble is necessary to give life, meaning, and vitality to the claim, then the claim preamble should be construed as if in the balance of the claim") and *Pitney*

Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999).

The Examiner then goes on to state that the phrase "high-throughput" is at best, an intended use. In addition, the Examiner further considers the term to be a relative term to the rate at which samples are analyzed and does not necessarily require that thousands of samples be run in a timeframe of less than an hour. Thus, according to the Examiner, Claim 1 is directed to a method for screening fuel additives in fuel compositions by measuring deposit formation, and outputting the result.

First, in contrast to the Examiner's position, it is also well established that "[I]f the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim."

Halliburton Energy Services Inc. v. M-I LLC, 85 USPQ2d 1654, 1656 (Fed. Cir. 2008).

Moreover, where the patentee has clearly indicated via the specification and the prosecution history that the invention provides an essential feature and that essential feature appears in a claim preamble, then that term as used in the preamble is "necessary to give life, meaning, and vitality to the claim," and may be used as a limitation. *MBO Laboratories Inc. v. Becton, Dickinson & Co.*, 81 USPQ2d 1661, 1666 (Fed. Cir. 2007) *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 [51 USPQ2d 1161] (Fed. Cir. 1999) (quotation marks omitted).

Second, applicant respectfully submits that the Examiner is narrowly construing the preamble of Claim 1 by only looking at the term "high throughput". In contrast thereto, the

preamble of Claim 1 recites “high throughput method for screening fuel additive composition samples, under program control”. Accordingly, as is the case here, the recitation “high throughput method for screening fuel additive composition samples, under program control” as presently recited in Claim 1 is necessary to give life, meaning and vitality to the present claims as the purpose of the claims is to conduct a high throughput method under program control, i.e., automated, such that a relatively large number of different fuel additive composition samples can be rapidly prepared and screened for deposit formation data. Certainly, Heneghan et al. do not disclose anything that would remotely be considered a high throughput method. In contrast, Heneghan et al. merely disclose the study of jet fuel thermal stability (carbon deposition rate), dissolved oxygen consumption and methane production for three baseline jet fuels and three fuels blended with additives using a flowing, single-pass heat exchanger test rig. In fact, Heneghan et al. further disclose in item 4 on page 481, which is relied upon by the Examiner, that in order to measure the carbon deposition of the sample, the test section of the rig is removed, drained, cut into 25 mm or 50 mm length segments, rinsed with hexane, dried in a vacuum oven and analyzed for carbon deposits on a Leco RC-412 multiphase carbon analyzer. Thus, Heneghan et al. do not disclose all of the elements and limitations of the claimed invention.

For the foregoing reasons, Claims 1, 2 and 8 are believed to be novel over Heneghan et al. and withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

The Examiner has rejected Claims 1-6 and 8-11 under 35 U.S.C. §102(b) as being anticipated by Cherpeck '178.

As with Heneghan et al., the Examiner likewise alleges that the recitation "high throughput" deserve no patentable weight because the recitations are in the preamble of the claim in rejecting Claims 1-6 and 8-11 over Cherpeck '178. Applicant submits that for the reasons discussed above, the recitation "high throughput method for screening fuel additive composition samples, under program control" as recited in the preamble of Claim 1 can only be regarded as necessary to give life, meaning, and vitality to the claim and may therefore be used as a limitation. Thus, the recitation "high throughput method for screening fuel additive composition samples, under program control" in the preamble of Claim 1 must be considered when determining patentability of the claims.

Accordingly, Cherpeck '178 is no more an anticipatory reference than Heneghan et al. In contrast to the presently claimed invention, Cherpeck '178 discloses that certain Mannich condensation products provide excellent control of engine deposit, including intake valve deposits, with fewer combustion chamber deposits when employed as fuel additives. Cherpeck '178 further discloses in Example 3, which is relied upon by the Examiner, that the deposit reducing capacity of a Mannich condensation product blended in gasoline were determined in an ASTM/CFR single-cylinder engine test by running the engine for 15 hours, removing the intake valve, washing the intake valve with hexane and weighing it. Thus, Cherpeck '178 merely discloses individually testing fuel compositions for deposit formation via a non-automated process. At no point, however, is there any disclosure in Cherpeck '178 of a high throughput method for screening a plurality of fuel

additive samples for deposit formation. As such, Cherpeck '178 cannot possibly disclose all of the elements and limitations of the claimed invention.

For the foregoing reasons, Claims 1-6 and 8-11 are believed to be novel over Cherpeck '178 and withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

The Examiner has rejected Claims 1-6 and 8-11 under 35 U.S.C. §102(b) as being anticipated by Cherpeck '315.

As with Heneghan et al., the Examiner likewise alleges that the recitation "high throughput" deserve no patentable weight because the recitations are in the preamble of the claim in rejecting Claims 1-6 and 8-11 over Cherpeck '315. Applicant submits that for the reasons discussed above, the recitation "high throughput method for screening fuel additive composition samples, under program control" as recited in the preamble of Claim 1 can only be regarded as necessary to give life, meaning, and vitality to the claim and may therefore be used as a limitation. Thus, the recitation "high throughput method for screening fuel additive composition samples, under program control" in the preamble of Claim 1 must be considered when determining patentability of the claims.

Accordingly, Cherpeck '315 is no more an anticipatory reference than Heneghan et al. In contrast to the presently claimed invention, Cherpeck '315 discloses novel poly(vinyl ether) amines and their use in fuel compositions to prevent and control engine deposits. Cherpeck '315 further discloses in Example 14, which is relied upon by the Examiner, that the thermal stability of various test samples was measured by thermogravimetric analysis (TGA) employing a DuPont 951 TGA instrument coupled with a microcomputer for data

analysis. Each example carried out by Cherpeck '315 is a manual laboratory test. At no point is there any disclosure in Cherpeck '315 of a high throughput method for screening a plurality of fuel additive samples for deposit formation. As stated hereinabove, the high throughput method, as set forth in the present claims, is conducted under program control such that a relatively large number of different fuel additive samples can be rapidly prepared and screened for deposit formation. By comparison, Cherpeck '315 merely discloses individually testing fuel compositions for deposit formation via a non-automated process. As such, Cherpeck '315 cannot possibly disclose all of the elements and limitations of the claimed invention.

For the foregoing reasons, Claims 1-6 and 8-11 are believed to be novel over Cherpeck '315 and withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

The Examiner has rejected Claims 1-6, 8-13, 15 and 17 under 35 U.S.C. §103(a) as being obvious over Cherpeck '178 in view of Burow et al.

The deficiencies of Cherpeck '178 discussed above with respect to the rejection of Claim 1 apply with equal force to this rejection. Burow et al. do not cure and is not cited as curing the deficiencies of Cherpeck '178. In order to cure the deficiencies of Cherpeck '178, the Examiner alleges:

“Those of ordinary skill in the art of analytical chemistry, are typically well-versed in routine automation procedures and general computer implementation, as set forth in claims 12, 13, 15 and 17, as demonstrated by Burow. It is a stretch to suggest that the use of machines and computers belongs exclusively to those who perform analysis of the type of samples taught by Burow, or that such automation has not broken through to the claimed art and been well-recognized by those who develop

and screen new fuel additive samples as taught by Cherpeck.

In fact Burow quite clearly states that this is not the case as suggested by Applicants:

"Automated processing systems are useful in many applications and fields. For example, automated laboratory systems are used in biotechnology and biomedical industries, e.g., for producing large numbers of samples and screening these samples for a desired property. Such samples include, but are **not limited to, chemicals, cells, cell extracts, or genetic material such as cDNA, retroviruses, or anti-sense oligonucleotides.**"

Burow, col. 1, paragraph 0003 (emphasis added)."

It is well established that there must be some teaching, motivation or suggestion to select and combine references relied upon as evidence of obviousness. As is the case here, Burow et al. do not disclose that a fuel additive composition sample can be screened for deposit formation in a high throughput manner under program control. It is the Examiner's apparent belief that Example 3 of Cherpeck '178 teaches testing multiple fuel samples by measuring their deposit formation. Therefore, according to the Examiner:

"One of ordinary skill in the art would have had a reasonable expectation of success in arriving at the invention as claimed because Cherpeck and Burow are directed to using analytical laboratory instrumentation for chemical analysis. One of ordinary skill in the art would have recognized the advantages of using generic and routine robotic based systems, computers, and remote operations as taught by Burow for the types of chemical analysis of Cherpeck because of the increase in throughput provided by these assemblies when dealing with voluminous sample sizes. Accordingly, the invention as a whole is prima facie obvious over the art of record."

However, Example 3 of Cherpeck '178 discloses individually testing each fuel sample by running each test in an engine. Thus, even by combining Cherpeck '178 with Burow et al.

one skilled in the art would not even arrive at the claimed invention. Accordingly, nothing in Burow et al. would lead one skilled in the art to look to the disclosure of Burow et al. to modify the disclosure of individually testing the deposit reducing capacity of a Mannich condensation product blended in gasoline by running an ASTM/CFR single-cylinder engine of Cherpeck '178 and arrive at the high throughput method, as set forth in the present claims, conducted under program control, such that a relatively large number of different fuel additive samples can be rapidly prepared and screened for deposit formation. Only by using applicant's disclosure as a guide has the Examiner been able to piece together the claimed invention.

Accordingly, Claims 1-6, 8-13, 15 and 17 are believed to be nonobvious, and therefore patentable, over Cherpeck '178 and Burow et al. Thus, withdrawal of the rejection of Claims 1-6, 8-13, 15 and 17 under 35 U.S.C. §103(a) is respectfully requested.

The Examiner has rejected Claims 1-11, 62 and 63 under 35 U.S.C. §103(a) as being obvious over Cherpeck '315.

In the Office Action, the Examiner maintains:

“One of ordinary skill in the art would have had a reasonable expectation of success in arriving at the invention as claimed because Cherpeck 2 teaches the analysis of fuel samples using TGA with an approximate sample size reasonably close to the claimed sample size, especially given the claimed language of "about" in claims 62 and 63 (MPEP §2144.05). Therefore, the invention as a whole was *prima facie* obvious at the time it was made.”

In contrast to the Examiner's position, each example carried out by Cherpeck '315 is a manual laboratory test. At no point is there any disclosure in Cherpeck '315 of a high

throughput method for screening a plurality of fuel additive samples for deposit formation. As stated hereinabove, the high throughput method, as set forth in the present claims, is conducted under program control such that a relatively large number of different fuel additive samples can be rapidly prepared and screened for deposit formation. By comparison, Cherpeck '315 merely discloses individually testing fuel compositions for deposit formation via a non-automated process. Thus, nothing in Cherpeck '315 would lead one skilled in the art to modify the manual tests carried out by Cherpeck '315 and arrive at the claimed high throughput method conducted under program control. Only by using applicant's disclosure as a guide has the Examiner been able to piece together the claimed invention.

Accordingly, Claims 1-11, 62 and 63 are believed to be nonobvious, and therefore patentable, over Cherpeck '315. Thus, withdrawal of the rejection of Claims 1-11, 62 and 63 under 35 U.S.C. §103(a) is respectfully requested.

The Examiner has rejected Claims 1-6, 8-15 and 17 under 35 U.S.C. §103(a) as being obvious over Cherpeck '178 in view of Burow et al. and Luttermann et al. The deficiencies of Cherpeck '178 and Burow et al. discussed above with respect to the rejection of Claim 1 apply with equal force to this rejection. Luttermann et al. do not cure and is not cited as curing the deficiencies of Cherpeck '178 and Burow et al. Instead, Luttermann et al. is merely cited for its disclosure of combinatorial approaches using decision making processes for selection of positive samples for further testing. Thus, even by combining Cherpeck '178, Burow et al. and Luttermann et al., one skilled in the art would not even arrive at the claimed invention. Accordingly, nothing in and Luttermann et

al. would lead one skilled in the art to look to the disclosure of Luttermann et al. to modify the disclosures of Burow et al. and Cherpeck '178 and arrive at the high throughput method, as set forth in the present claims, conducted under program control, such that a relatively large number of different fuel additive samples can be rapidly prepared and screened for deposit formation. Only by using applicant's disclosure as a guide has the Examiner been able to piece together the claimed invention.

Accordingly, Claims 1-11, 62 and 63 are believed to be nonobvious, and therefore patentable, over Cherpeck '178, Burow et al. and Luttermann et al. Thus, withdrawal of the rejection of Claims 1-11, 62 and 63 under 35 U.S.C. §103(a) is respectfully requested.

For the foregoing reasons, Claims 1-17, 62 and 63 as presented herein are believed to be in condition for allowance. Such early and favorable action is earnestly solicited.

Respectfully submitted,



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